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Research

Bulletin

Route to:

A Publication from INPUT's Downsizing Information Systems Program

Client/Server—Three Perspectives on User Requirements

The Perspectives

Until recently, the IS department and IBM formed a strong coalition which controlled the information technology architecture of most organizations. This team exercised control over technology evaluation and expenditures, standards and the professional staff required to implement new systems. The downsizing revolution and the resulting migration to client/server (C/S) architectures has destroyed that coalition in most instances, and resulted in the emergence of three unique user organization classes with widely varying perspectives and requirements regarding systems planning, technology and systems development.

The three emerging user classes fostered by downsizing are characterized as follows:

- *Compute Intensive* - This user class had its origin in the engineering and scientific community, but has grown to include business and financial analysts, and others outside the engineering community whose analytical requirements are facilitated by the growing capabilities of high-end workstations and networking capabilities.

Of all the classes using C/S technology, this group reaps the immediate benefit of the hardware's increasing price performance.

Furthermore, the growing number of packaged solutions and applications shells provided by specialty software products companies to address general classes of high-end analytical problem solving is minimizing their need for in-house custom development services.

This user class knows and uses UNIX. It will do its own programming if necessary and generally feels it can manage its own data. Based on past experience, it doesn't expect much help from the IS department.

- *Knowledge Intensive* - This class is represented by office workers and professionals who believe that performance on the substantive (as opposed to administrative) portions of their work can be enhanced by using computer technology. They know what they want to accomplish, but frequently have information systems requirements that go well beyond their capabilities to implement them.

The types of applications required to support this group are more data-intensive and less mathematically demanding than those of the compute-intensive class. However, in-depth business knowledge is a prerequisite to deliver an effective solution.

This class is less interested in operating systems or tools. It only wants help in implementing applications.

- **Data Intensive** - This user class evolved from those who adopted the PC in the early eighties. They believe that information technology and data should be distributed freely throughout the organization.

They use Windows and DOS (or a Mac) and believe that there are sufficient applications packages to permit end users to make effective use of information technology.

Exhibit 1 summarizes the emerging requirements of these three user classes in terms of their needs for data, software, development services and overall dependence on IS.

- The **knowledge intensive** class wants professional resources dedicated to its particular applications arena.
- The **data intensive group** wants easy access to the data bases traditionally managed by IS, as well as information resources outside the firm.

IS is responding to these changing requirements in a predictable way; i.e. by focusing on meeting the requirements of the user class most dependent on their traditional capabilities, and who make up the vast majority in terms of numbers in most companies.

This assertion is supported by data gathered for INPUT's most recent downsizing report, *Methodologies for IT Downsizing*, in which IS executives were asked to rate support requirements.

Exhibit 1

User Requirements by User Class

User Class	Data Needs	Software Needs	Dev. Needs	IS Depend.
Compute Intensive	L	H	L	L
Knowledge Intensive	M	M	H	M
Data Intensive	H	L	L	H

Key: H = High M=Medium L=Low

Source: INPUT

The View From the Information Systems (IS) Department

From the perspective of the IS department, these three classes of users not only contend for common resources, but also have requirements for services and technology that are significantly different from those traditionally provided by IS. A mandated common architecture no longer exists.

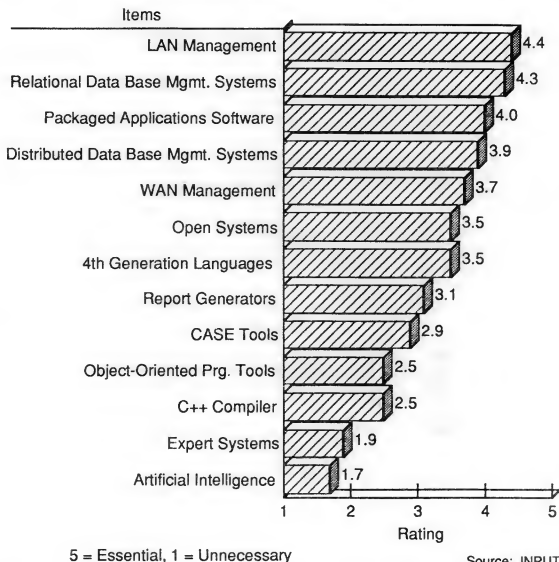
- The **compute intensive** faction is interested in taking the money it formerly spent on mainframes and investing it in workstations and software.

Exhibit 2 shows how IS executives rated 13 technologies or capabilities that they said their organizations would require in order to support downsized client/server environments. The results provide insight into which class of users they will be supporting and in what manner.

- The heavy emphasis placed on the first four requirements (LAN Management, RDBMS, Packaged Applications Software, and DDBMS) indicates a commitment to support corporatewide networks and the distributed data requirements of the **data intensive** user class.

Exhibit 2

Downsizing Requirements Analysis



- At the other end of the spectrum, there is little interest in CASE tools, object-oriented programming tools, and C++, all key technologies for applications development in the client/server environment. This may indicate that the IS function is backing off of its previous emphasis on custom development; or could simply reflect a priority designed to get the infrastructure and tool kits organized to meet the requirements of the largest number of users, and then worry about involvement in development.
- Finally, there is very low interest at the moment in artificial intelligence or expert systems. This indicates, at least at present, a lack of interest by IS in supporting knowledge-intensive users for whom these technologies are key.

In the final analysis, IS remains on the horns of a dilemma. Lacking the unified architecture that SAA promised to deal with platform diversity in the IBM world, IS must deal with a heterogeneous technology portfolio and at the same time try to meet diverging user needs.

It is most likely that IS will adopt the strategy indicated by the analysis above; i.e. support the majority of users whose requirements necessitate some centralized network architecture and data management. If so, this will leave two classes of users, the *compute intensive* and *knowledge intensive* to fend for themselves.

This will create new opportunities for information services vendors.

Opportunities for Information Services Vendors

The emergence of three user classes with varying requirements has clear implications for software and services vendors. Depending on how IS responds to each class in a given organization, vendors will find clear-cut targeted opportunities.

If we assume that IS focuses on the network and data management activities described above, then vendors could find:

- Niche opportunities for servicing the *compute intensive* faction through the provision of new hardware and sophisticated applications software.
- *Knowledge intensive* users will require custom development services with a heavy emphasis on industry- or profession-specific knowledge.
- The *data intensive* segment, most likely aligned with IS, will need increasingly sophisticated approaches to data distribution, management and solutions to complex problems involving network management and integration.

Throughout this year, INPUT will continue to examine how requirements for these various classes of client/server users evolve, and the impact that this evolution will have on potential markets and service requirements.

This Research Bulletin is issued as part of INPUT's Downsizing Information Systems Program. If you have questions or comments on this bulletin, please call your local INPUT organization or R. Dennis Wayson at INPUT, 1280 Villa Street, Mountain View, CA 94041-1194 (415) 961-3300